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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,747	04/09/2004	Je-hyoung Ryu	1572.1241	8808
21171	7590	06/28/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			NGHIEM, MICHAEL P	
			ART UNIT	PAPER NUMBER
			2863	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/820,747

Applicant(s)

RYU ET AL.

Examiner

Michael P. Nghiem

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 1,3-5,10,12 and 15 is/are rejected.
- 7) ☒ Claim(s) 2,6-9,11,13,14 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4-9-04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the elastic member **connecting the contact block and the lead pusher** (claim 11) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 11-13 are objected to because of the following informalities:

- claims 11-13, "the contact block" lacks antecedent basis.
- claim 12, "a second elastic member" lacks antecedent basis. Where is the first elastic member?

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 4, 10, 12, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (2005/0012498).

Regarding claim 1, Lee et al. discloses an inspecting apparatus (Fig. 1) for a semiconductor device (paragraph 0024, line 2) comprising:

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- a match plate (357);
- a contact module (355) combined with the match plate (paragraph 0076, lines 5-7), the contact module comprising:
  - a radiator (403) to contact the semiconductor device (paragraph 0082, lines 4-5), and a tester (comprises 300) to contact leads (361) of the semiconductor device (paragraph 0070, lines 1-3), and a thermally conductive pad (conductor, paragraph 0018, line 13) installed on a contacting face of the radiator, to transfer heat from the semiconductor device to the radiator (paragraph 0018, lines 12-19).

Regarding claim 3, Lee et al. discloses that the thermally conductive pad is compressible (conductor is deemed to be compressible).

Regarding claim 4, Lee et al. discloses that the thermally conductive pad is compressible from 1-2 mm (if an adequate force is applied to the conductor).

Regarding claim 10, Lee et al. discloses that the radiator comprises:

- a heat sink (403);
- a contact pusher (350) to contact the semiconductor device having the thermally conductive pad attached to a contacting face (paragraph 0076, lines 1-3);
- a heat flat pusher (351) combined with the contact pusher and the heat sink to transfer heat from the semiconductor device to the heat sink via the contact pusher (Fig. 12).

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Regarding claim 12, Lee et al. discloses a second elastic member (358) installed between the match plate and the contact block, to allow the contact block to move up and down elastically corresponding to ascent and descent of the match plate, thereby pressing the lead pusher against the leads of the semiconductor device (Fig. 13).

Regarding claim 15, Lee et al. discloses that the second elastic member is a spring (Fig. 13).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of Hirotsuru et al. (US 6,447,894).

Lee et al. discloses all the claimed limitations as discussed above except the thermally conductive pad comprises a ceramic-silicon composite.

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Nevertheless, Hirotsuru et al. discloses that a ceramic-silicon composite (column 1, lines 1-2) for the purpose of having excellent thermal conductive characteristic and light weight (column 1, lines 2-4).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Lee et al. with a ceramic-silicon composite as disclosed by Hirotsuru et al. for the purpose of having excellent thermal conductive characteristic and light weight.

### ***Allowable Subject Matter***

Claims 2, 6-9, 11, 13, 14, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 17 and 18 are allowed.

### ***Reasons For Allowance***

The **combination** as claimed wherein the inspecting apparatus for the semiconductor device comprising a plurality of contact modules, wherein the match plate is formed with a plurality of combining holes combinable with the plurality of contact modules (claims 2, 18) or

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the thermally conductive pad is installed on the radiator using a thermally conductive double-sided adhesive member (claims 6, 7) or a first elastic member installed on the circumference of the heat flat pusher to elastically connect the contact block and the lead pusher (claim 11) or the compressible thermally conductive pad conforms to irregularities of the semiconductor device, preventing air from being present between the thermally conductive pad and the semiconductor device when the thermally conductive pad and the semiconductor device are in contact (claim 17) is not disclosed, suggested, or made obvious by the prior art of record.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (571) 272-2277. The examiner can normally be reached on M-H.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MICHAEL NGHIEM  
PRIMARY EXAMINER

Michael Nghiem

June 26, 2005